

WHAT IS CLAIMED IS

1. An image editing user interface system comprising:
one or more computers with one or more graphical user interfaces;
a receiving process for receiving one or more rendered two dimensional images on the computer graphical user interface, each two dimensional image representing reflected light from a lit three dimensional object model, the reflective light at each point of the two dimensional image corresponding to an object point on the three dimensional object model;
and
a changing process for changing a portion of the two dimensional image by changing the light intensity at a set of one or more points on the two dimensional image, the change in light intensity at the set of points causing a change in the three dimensional model to correspond to the change in the light intensity.
2. A system according to claim 1, wherein the reflected light at each point of the two dimensional image corresponds to the respective object point because a light source lighting the three dimensional model and a point diffuse reflectance of the three dimensional model are invariant.
3. A system according to claim 1, where the change in the three dimensional model is a change in the surface curvature at each object point corresponding to one of the points in the set of points of the two dimensional model.
4. A system according to claim 3, wherein a color is changed at one or more of the object points with a changed surface curvature.
5. A system according to claim 3, wherein surface curvature is represented in the three dimensional object model.
6. A system according to claim 3, wherein surface curvature is represented by additional three dimensional information.

7. A system according to claim 6, wherein the additional three dimensional information is a bit map representing one or more of the following: normals at the object point, and displacement of the object point.
8. A system according to claim 1, wherein one or more of the changed points on the two dimensional image are rendered with depth information corresponding to the position of their respective object point.
9. A system according to claim 8, wherein the depth information is edited to resolve ambiguity in the changed object points.
10. A system according to claim 1, wherein the two dimensional image further comprises geometric discontinuities that can not be changed by a user in the two dimensional image rendered.
11. An image editing user interface method comprising the steps of:
receiving one or more rendered two dimensional images on a computer graphical user interface, each two dimensional image representing reflected light from a lit three dimensional object model, the reflective light at each point of the two dimensional image corresponding to an object point on the three dimensional object model; and
changing a portion of the two dimensional image by changing the light intensity at a set of one or more points on the two dimensional image, the change in light intensity at the set of points causing a change in the three dimensional model to correspond to the change in light intensity.
12. A method according to claim 11, wherein a light source lighting the three dimensional model and a point diffuse reflectance of the three dimensional model are invariant so that the reflected light at each point of the two dimensional image corresponds to the respective object point.

13. A method according to claim 11, wherein the change in the three dimensional model is a change in the surface curvature at each object point corresponding to one of the points in the set of points of the two dimensional model.
14. A method according to claim 13, wherein surface curvature is represented in the three dimensional object model.
15. A method according to claim 13, wherein surface curvature is represented by additional three dimensional information.
16. A method according to claim 15, wherein the additional three dimensional information is a bit map representing one or more of the following: normals at the object point, and displacement of the object point.
17. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for editing an image, said method steps comprising:
receiving one or more rendered two dimensional images on a computer graphical user interface, each two dimensional image representing reflected light from a lit three dimensional object model, the reflective light at each point of the two dimensional image corresponding to an object point on the three dimensional object model; and
changing a portion of the two dimensional image by changing the light intensity at a set of one or more points on the two dimensional image, the change in light intensity at the set of points causing a change in the three dimensional model to correspond to the change in light intensity.
18. A program storage device according to claim 17, wherein the change in the three dimensional model is a change in the surface curvature at each object point corresponding to one of the points in the set of points of the two dimensional model.
19. A program storage device according to claim 17, wherein surface curvature is represented in the three dimensional object model.